UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/323,206	06/01/1999	WILLIAM R. BANDY	1689.0010001	8893

7590   07/02/2004

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EXAMINER
MYHRE, JAMES W

ART UNIT	PAPER NUMBER
3622	

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)	
Office Action Summary	09/323,206	BANDY ET AL.	
	Examiner	Art Unit	
	James W Myhre	3622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _01 April 2004_.
2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _92-99,101-104 and 106-160_ is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) _92-99,101-103,106-117 and 158-160_ is/are allowed.
6) ☒ Claim(s) _104 and 118-157_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
    application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _4/1/04_.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   The Request for Continued Examination (RCE) filed on April 1, 2004 was not entered into the electronic application prior to its forwarding to the Examiner but had been entered into the PALM system. This resulted in an inappropriate Advisory Action being sent to the Applicant on May 28, 2004. Therefore, the Examiner is withdrawing the Advisory Action and is issuing the following Office Action based on the RCE and response. The response filed on April 1, 2004 under 37 CFR 1.111 is not sufficient to overcome the Walter et al (5,856,788) and Werb (6,483,427) references.

Allowable Subject Matter

2.   Claims 92-99, 101-103, 106-117, and 158-160 contain allowable subject matter.

Statement of the Reasons for the Indication of Allowable Subject Matter

3.   The following is a statement of reasons for the indication of allowable subject matter:

While prior art was found which disclosed systems and methods using electronic tags to track and locate items such as luggage (Kaplan et al, US 3, 689,885)(Wade, William, Electronic News) and prior art was also found which disclosed procedures for conflict resolution between multiple tags using random time differentiation to respond to a polling signal (Reis et al, EP 0,467,036)(Walter et al, 5,856,788)(Werb, 6,483,427),

prior art was not located in which multiple tags were polled within a specified location to

identify the items and which also handled contention between the identity signals from

one or more tags within the location by using a secondary identification number stored

in each tag. Therefore, the Examiner considers the combination of polling a plurality of

electronic tags and resolving contention between the tags by the tags responding with a

secondary identification code as the non-obvious novelty of the invention.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as
> set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious
> at the time the invention was made to a person having ordinary skill in the art to which said
> subject matter pertains. Patentability shall not be negatived by the manner in which the invention
> was made.

5.   Claims 104 and 118-157 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Walter et al (5,856,788) in view of Werb (6,483,427).

Claims 104 and 135: Walter discloses an inventory system comprising a plurality

of electronic tags and a tag reader (col 3, lines 24-38) which performs multiple reads of

the tags to avoid time slot contention (col 3, lines 10-23). Walter further discloses that

the tags are identified by a plurality of bits (col 5 and 6, Table 1) and that a different bit

is read during each of the multiple read cycles. While Walter does not explicitly

disclosed that a plurality of bits are read each time, Werb discloses a similar system and

method for inventorying a plurality of electronic tags in which a tag is assigned a Unique

Identifying Code (UIC) and that "the tag can be configured to send shorter transmissions more frequently"..."This shorter code might be as short as one bit long, and take just a few milliseconds to transmit" (col 14, lines 41-65). Therefore, it would have been obvious to one having ordinary skill in the art that in order to use different parts of the identification number for multiple reads, the identification number could be divided into subsets containing any number of bits from only one bit as Walter discloses to any number less than the total number as Werb discloses. One would have been motivated to use a plurality of bits in order to decrease the time it takes to identify a plurality of items when the identification number consists of a large number of bits as discussed by Werb, much like using the last four numbers of a credit card to quickly identify the card without disclosing the full account number.

While Walter discloses that a plurality of tags may respond at the same time and that the "tags communicate on a single frequency during at least overlapping time periods" (col 3, lines 6-9), Walter does not explicitly disclose the use of "time slots" for the responses. However, Werb discloses using a synchronization signal modified by the tag's UIC to determine the appropriate time slot in which each tag is to respond as one way to counter receiving signals from two or more tags simultaneously (col 12, line 39 - col 13, line 30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize such a time slot contention resolution means with Walter's tags. One would have been motivated to use time slots in order to decrease the chance that a plurality of tags would respond simultaneously.

Claims 118, 136, 155, and 156: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claims 104 and 135 above, and <u>Werb</u> further discloses the tag responding within a defined time slot defined by at least a plurality of bits from the UIC (col 12, line 39 - col 13, line 30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize such a time slot contention resolution means with <u>Walter</u>'s tags. One would have been motivated to use time slots in order to decrease the chance that a plurality of tags would respond simultaneously.

Claim 120: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claim 104 above. <u>Walter</u> further discloses the tag reader transmitting a first value and a second value of a tag to be located (col 5, lines 6-9 and col 6, lines 10-57), and <u>Werb</u> discloses that the values are a first plurality of bits and a second plurality of bits (col 14, lines 41-65) as discussed in Claim 104 above.

Claim 121: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claim 120 above, and <u>Walter</u> further discloses the tag responding by transmitting its first and second plurality of bits when they correspond to the values transmitted by the tag reader (col 6, lines 10-57).

Claim 122: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claim 121 above, and <u>Walter</u> further discloses the tag including a third plurality of bits, the tag reader transmitting the third plurality of bits to the tag, and the tag responding with the third plurality of bits when they correspond to the value transmitted by the tag reader (col 6, lines 10-57).

Claims 119, 123, and 137: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claims 104, 121, and 135 above, and <u>Walter</u> further discloses that RFID tags including a sensor (the tags "sense" the Awake and Sleep signals)(col 1, col 60-62 and col 2, lines 40-42).

Claims 124 and 138: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claims 104 and 135 above, and <u>Walter</u> further discloses that the tag(s) are "connected to any object desired" (col 4, lines 45-53) and uses as an example a biological sample carried in a "flask, vile, case, pouch, or other container". <u>Werb</u> also discloses that the tags "are attached to people and/or items being tracked" (col 3, lines 54-55). While neither reference explicitly discloses that the object/item to which the tag is attached is a product to be sold (i.e. merchandise), it would have been obvious to one having ordinary skill in the art at the time the invention was made to attach inventory tags to such items. One would have been motivated to attach tags to merchandise in order to facilitate the inventory of such objects and in view of <u>Walter</u>'s disclosure that the tags could be attached to any desired object.

Claims 125, 127, and 139: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claims 104, 124, and 138 above, but neither reference explicitly discloses if the type of material being used in the manufacture of the tags is flexible or inflexible. However, since no reason is given in the claims of why the substrate material needs to be flexible and this flexibility feature is not used in the claims, no patentable weight is given to this feature. The Examiner notes that any RFID tag, flexible or inflexible, could be used in

the systems disclosed by the reference and the present invention without detracting from the method of inventorying the tags.

Claim 126: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claims 104 above, and <u>Walter</u> further discloses the tag reader transmitting a wake up (Awake) signal (col 1, col 60-62 and col 2, lines 40-42).

Claim 128: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claim 104 above, and <u>Walter</u> further discloses that the tags can receive and transmit signals (i.e. contain transceivers)(col 2, lines 30-35 and col 3, lines 43-50).

Claims 129 and 140: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claims 104 and 135 above, and <u>Walter</u> further discloses the tags evaluating the signal received from the tag reader and replying to the signal when appropriate (the correct value is in the corresponding bit)(col 5, lines 10-16).

Claim 130: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claim 129 above, and <u>Walter</u> further discloses that the tag has a sensor (for receiving and determining status, i.e. Awake, Sleep, Isolated, etc.)(col 1, col 60-62 and col 2, lines 40-42) and means for transmitting the contents of said sensor (transceiver)(col 2, lines 30-35 and col 3, lines 43-50).

Claims 131, 141, and 142: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claims 129, 135, and 140 above, and <u>Werb</u> further discloses the tag reader emitting a series of clock signals defining time slots (col 7, line 45 - col 8, line 5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to transmit a synchronization signal to define time slots for receiving

responses from the tags in <u>Walter</u>. One would have been motivated to use the synchronization signal in <u>Walter</u> to define time slots in order to ensure all of the tags were using the same "time data" on which to base their transmission delays as discussed by <u>Werb</u>.

Claim 132: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claim 131 above, and <u>Walter</u> further discloses that each tag begins a count based on the clock signal (synchronization)(col 9, line 42 - col 10, line 10).

Claim 133: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claim 131 above, and <u>Walter</u> further discloses polling all tags whose reply conflicted with another tag (col 10, lines 11-32).

Claim 134: <u>Walter</u> and <u>Werb</u> disclose an inventory system as in Claim 131 above, and <u>Walter</u> further discloses that the tag reader can initiate an immediate read, a specific tag read, or a timed broadcast read of the tags (col 9, line 19 - col 10, line 32).

Claim 143: <u>Walter</u> and <u>Werb</u> disclose an inventory method which includes the steps of Claims 104 and 128 above, in which a tag reader performs multiple reads of the tags to avoid time slot contention (col 3, lines 10-23). <u>Walter</u> further discloses that the tags are identified by a plurality of bits (col 5 and 6, Table 1) and that a different bit is read during each of the multiple read cycles. While <u>Walter</u> does not explicitly disclosed that a plurality of bits are read each time, <u>Werb</u> discloses a similar system and method for inventorying a plurality of electronic tags in which a tag is assigned a Unique Identifying Code (UIC) and that "the tag can be configured to send shorter transmissions more frequently"..."This shorter code might be as short as one bit long,

and take just a few milliseconds to transmit" (col 14, lines 41-65). Therefore, it would have been obvious to one having ordinary skill in the art that in order to use different parts of the identification number for multiple reads, the identification number could be divided into subsets containing any number of bits from only one bit as Walter discloses to any number less than the total number as Werb discloses. One would have been motivated to use a plurality of bits in order to decrease the time it takes to identify a plurality of items when the identification number consists of a large number of bits as discussed by Werb.

While Walter discloses that a plurality of tags may respond at the same time, Walter does not explicitly disclose the use of "time slots" for the responses. However, Werb discloses using a synchronization signal modified by the tag's UIC to determine the appropriate time slot in which each tag is to respond as one way to counter receiving signals from two or more tags simultaneously (col 12, line 39 - col 13, line 30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize such a time slot contention resolution means with Walter's tags. One would have been motivated to use time slots in order to decrease the chance that a plurality of tags would respond simultaneously.

Claims 144 and 145: Walter and Werb disclose an inventory method as in Claim 143 above, and Walter further discloses that the tag has a sensor (for receiving and determining status, i.e. Awake, Sleep, Isolated, etc.)(col 1, col 60-62 and col 2, lines 40-42) and means for transmitting the contents of said sensor (transceiver) for receipt by the tag reader (col 2, lines 30-35 and col 3, lines 43-50).

Claim 146: <u>Walter</u> and <u>Werb</u> disclose an inventory method as in Claim 143 above. <u>Walter</u> further discloses the tag reader transmitting a first value and a second value of a tag to be located, wherein the values are a first plurality of bits and a second plurality of bits (col 5, lines 6-9 and col 6, lines 10-57), and <u>Werb</u> discloses that the values are a first plurality of bits and a second plurality of bits (col 14, lines 41-65) as discussed in Claim 143 above.

Claim 147: <u>Walter</u> and <u>Werb</u> disclose an inventory method as in Claim 146 above, and <u>Walter</u> further discloses the tag responding by transmitting its first and second plurality of bits when they correspond to the values transmitted by the tag reader (col 6, lines 10-57).

Claim 148: <u>Walter</u> and <u>Werb</u> disclose an inventory method as in Claim 147 above, and <u>Walter</u> further discloses the tag including a third plurality of bits, the tag reader transmitting the third plurality of bits to the tag, and the tag responding with the third plurality of bits when they correspond to the value transmitted by the tag reader (col 6, lines 10-57).

Claim 149: <u>Walter</u> and <u>Werb</u> disclose an inventory method as in Claim 148 above, and further discloses that the tag(s) are "connected to any object desired" (col 4, lines 45-53) and uses as an example a biological sample carried in a "flask, vile, case, pouch, or other container". <u>Werb</u> also discloses that the tags "are attached to people and/or items being tracked" (col 3, lines 54-55). While neither reference explicitly discloses disclosed that the object to which the tag is attached is a product to be sold (i.e. merchandise), it would have been obvious to one having ordinary skill in the art at

the time the invention was made to attach inventory tags to such items. One would

have been motivated to attach tags to merchandise in order to facilitate the inventory of

such objects and in view of Walter's disclosure that the tags could be attached to any

desired object.

Claim 150: Walter and Werb disclose an inventory method as in Claims 149

above, but neither reference explicitly discloses if the type of material being used in the

manufacture of the tags is flexible or inflexible. However, since no reason is given in

the claims of why the substrate material needs to be flexible and this flexibility feature is

not used in the claims, no patentable weight is given to this feature. The Examiner notes

that any RFID tag, flexible or inflexible, could be used in the systems disclosed by the

reference and the present invention without detracting from the method of inventorying

the tags.

Claim 151: Walter and Werb disclose an inventory method as in Claims 143

above, and Walter further discloses the tag reader transmitting a wake up (Awake)

signal (col 1, col 60-62 and col 2, lines 40-42).

Claim 152: Walter and Werb disclose an inventory method as in Claim 143

above, and Werb further discloses the tag reader emitting a series of clock signals

defining time slots (col 7, line 45 - col 8, line 5). Therefore, it would have been obvious

to one having ordinary skill in the art at the time the invention was made to transmit a

synchronization signal to define time slots for receiving responses from the tags in

Walter. One would have been motivated to use the synchronization signal in Walter to

define time slots in order to ensure all of the tags were using the same "time data" on which to base their transmission delays as discussed by Werb..

Claim 153: Walter and Werb disclose an inventory method as in Claim 152 above, and Walter further discloses that each tag begins a count based on the clock signal (synchronization)(col 9, line 42 - col 10, line 10).

Claim 154: Walter and Werb disclose an inventory method as in Claim 143 above, and Walter further discloses that the tag reader can initiate an immediate read, a specific tag read, or a timed broadcast read of the tags (col 9, line 19 - col 10, line 32).

Claim 157: Walter and Werb disclose a system for inventorying electronic tags as in Claim 104 above. Walter further discloses that the interrogator (tag reader) "include radio frequency transceivers, memories and programmable or custom logic circuitry for receiving, responding and implementing the commands and operations of the methods just described" (col 2, lines 31-35). While it is not explicitly disclosed that the programmable or custom circuitry on which the application's commands and operations are stored is contained on a PCMCIA card (i.e. PC Card), it is obvious that any suitable memory device to include PCMCIA cards could be utilize to effectuate the inventorying of the electronic tags in Walter. One would have been motivated to use a PCMCIA card or its equivalent in order to allow the physical device (tag reader) to be used for multiple purposes (e.g. a plurality of removable memory cards, each with various applications stored thereon).

Response to Arguments

6.   The Applicant argues that neither reference performs multiple reads in order "to avoid time slot contention"..."when two or more RFID tags respond *during the same time slot*" page 2). Using this definition of time slot contention, the Examiner notes that both Walter and Werb discuss how to prevent or overcome situations in which more than one tag responds at the same time, i.e. during the same time slot. Thus, they are concerned with avoiding "time slot contention".

The Applicant argues that Werb does not disclose the tag responding to an interrogation signal, but randomizes "the time interval between "chirps"...to avoid collisions" (pages 3-4). The Examiner notes that in the rejection above Walter was used to show the feature of transmitting and responding to an interrogation signal. However, the synchronization signal in Werb is used by the tags to determine when to respond ("chirp") and, thus, could also be viewed as an interrogation signal. Werb was used to show that the feature of using a plurality of bits, which may be less than the full identification number of the tag, was known in the art. As the Applicant has pointed out in the response, Werb discloses the tag sending the UID (identification code) or a shorter version of the code, which as Werb discloses "the shorter code might be as short as one bit long" (Walter's "bit-wise" signal)(col 14, lines 56-57) and that the length of the code "can be varied depending on signal processing requirements" (col 8, lines 54-57). Therefore, it would have been obvious to modify Walter to send a short code that was comprised of one or more bits and to vary the length of the transmitted code.

Conclusion

7.   All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
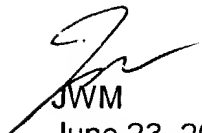
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Exr. James W. Myhre whose telephone number is (703) 308-7843. The examiner can normally be reached on weekdays from 6:30 a.m. to 3:30 p.m.
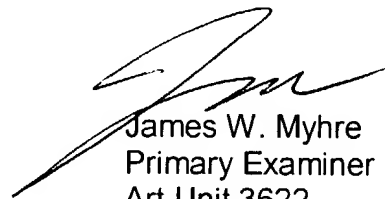
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Stamber, can be reached on (703) 305-8469. The fax phone number for Formal or Official faxes to Technology Center 3600 is (703) 872-9306. Draft or Informal faxes may be submitted to (703) 872-9327 or directly to the examiner at (703) 746-5544.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (703) 308-1113.

JWM
June 23, 2004

James W. Myhre
Primary Examiner
Art Unit 3622